

MELVIN KRAUS  
WILLIAM I. SOLOMON\*  
GREGORY E. MONTONE  
RONALD J. SHORE  
DONALD E. STOUT  
ALAN E. SCHIAVELLI  
PAUL J. SKWIERAWSKI\*  
ALFRED A. STADNICKI\*

DONALD R. ANTONELLI (1935-2005)

\*ADMITTED OTHER THAN VA

LAW OFFICES  
**ANTONELLI, TERRY, STOUT & KRAUS, LLP**

SUITE 1800  
1300 NORTH SEVENTEENTH STREET  
ARLINGTON, VIRGINIA 22209

TELEPHONE (703) 312-6600

FACSIMILE (703) 312-6666

wsolomon@antonelli.com

OF COUNSEL  
DAVID T. TERRY  
JESSICA H. BUI\*  
LEONID D. THENOR\*

PATENT AGENT  
LARRY N. ANAGNOS

VIA FACSIMILE: 14 PAGES (Including this cover)

TRANSMITTED TO FACSIMILE NO. 571-273-0125

**ATTN: Magdalen Greenlief**

Commissioner for Patents

P.O. BOX 1450

Alexandria, Virginia 22313-1450

Re: H. KAWAZOE – U.S. Application No. 10/628,274  
Atty. Docket No. 523.42982X00

**SUBMISSION:** **CREDIT CARD PAYMENT FORM (1 PG.); REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM BETWEEN THE JPO AND THE USPTO (2 PP.); JAPANESE LANGUAGE ALLOWED CLAIMS W/ENGLISH TRANSLATION AND VERIFICATION OF ENGLISH TRANSLATION (7 PP.); and JAPANESE LANGUAGE DECISION TO GRANT PATENT W/ENGLISH TRANSLATION AND VERIFICATION OF ENGLISH TRANSLATION (3 PP)**

SIR:

Applicants hereby submit the attached Credit Card Payment Form (1 pg.); Request for Participation in the Patent Prosecution Highway (PPH) Pilot Program Between the JPO and the USPTO (2 pp.); Japanese Language Allowed Claims w/English Translation and Verification thereof (7 pp.); and Japanese Language Decision to Grant Patent w/English Translation and Verification thereof (3 pp.) for entry in the above-identified application.

**CERTIFICATE OF TRANSMISSION:**

I hereby certify that the attached above-listed Submission is being formally transmitted to facsimile No. 571-273-0125 on August 25, 2006.

By Kelli S. Harris  
Kelli S. Harris

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PTO/SB/20 (05-06)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM BETWEEN THE JPO AND THE USPTO**

Application No.:	10/628,274	First Named Inventor:	Hiroshi KAWAZOE
Filing Date:	07/29/2003	Attorney Docket No.:	523.42982X00

Title of the Invention: **ELECTROPHORESIS MEMBER, PRODUCTION THEREOF AND CAPILLARY ELECTROPHORESIS APPARATUS**

**THIS REQUEST FOR PARTICIPATION IN THE PPH PILOT PROGRAM MUST BE FAXED TO:  
THE OFFICE OF THE COMMISSIONER FOR PATENTS AT 571-273-0125 DIRECTED TO THE ATTENTION OF MAGDALEN GREENLIEF**

**APPLICANT HEREBY REQUESTS PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM AND PETITIONS TO MAKE THE ABOVE-IDENTIFIED APPLICATION SPECIAL UNDER THE PPH PILOT PROGRAM.**

The above-identified application validly claims priority under 35 U.S.C. 119(a) and 37 CFR 1.55 to one or more corresponding JPO application(s).

The JPO application number(s) is/are: **2002-244676**

The filing date of the JPO application(s) is/are: **August 26, 2002**

**I. List of Required Documents:**

- a. A copy of all JPO office actions (including "Decision to Grant a Patent") in the above-identified JPO application(s).

- ☒ Is attached. Only JPO Office Action was "Decision to Grant a Patent"
- ☐ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.

- b. A copy of all claims which were determined to be patentable by the JPO in the above-identified JPO application(s).

- ☒ Is attached.
- ☐ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.

- c. English translations of the documents in a. and b. above along with a statement that the English translations are accurate are attached.

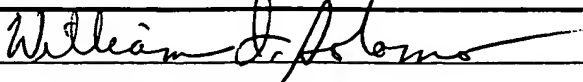
- d. Information disclosure statement listing the documents cited in the JPO office actions is attached.  
**None**  
Copies of all documents are attached except for U.S. patents or U.S. patent application publications.

This collection of information is required by 35 U.S.C. 119, 37 CFR 1.55, and 37 CFR 1.102(d). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. FAX COMPLETED FORMS TO: Office of the Commissioner for Patents at 571-273-0125, Attention: Magdalen Greenlief.

**REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM  
BETWEEN THE JPO AND THE USPTO**

(continued)

Application No.:	10/628,274	First Named Inventor:	Hiroshi KAWAZOE
<b>II. Claims Correspondence Table:</b>			
Claims in US Application	Patentable Claims in JP Application	Explanation regarding the correspondence	
1-14	1-14	<p>Claims 1-8 and 10-14 of the above-identified U.S. application expressly correspond respectively to claims 1-8 and 10-14 of the JP application, with the exception that multiple dependency has been deleted from the above-identified U.S. application. Claim 9 of the above-identified U.S. application is a dependent claim on independent claim 8, while claim 9 of the JP application is an independent claim, but the subject matter of each is in substance the same.</p>	
<p><b>III. All the claims in the US application sufficiently correspond to the patentable/allowable claims in the JPO application.</b></p>			
<p><b>IV. Payment of Fees:</b></p> <p>The Commissioner is hereby authorized to charge the petition fee under 37 CFR 1.17(h) as required by 37 CFR 1.102(d) to <input type="checkbox"/> Deposit Account No. _____</p> <p><input checked="" type="checkbox"/> Credit Card. Credit Card Payment Form (PTO-2038) is attached.</p>			

Signature 	Date August 25, 2006
Name (Print/Typed) William I. Solomon	Registration Number 28,565

## 【特許請求の範囲】

【請求項1】 第一の支持層、第一の接着剤層及び第二の支持層を有する第一の支持体と複数のキャピラリとを有する電気泳動部材であって、該第一の接着剤層が該第一の支持層上に形成されており、該複数のキャピラリが該第一の接着剤層に敷設されてキャピラリ層を形成しており、該キャピラリ層上に該第二の支持層が形成されており、該複数のキャピラリは、該第一の支持体が部分的に取り除かれて露出した窓部と、該第一の支持体の一方の端部が取り除かれて露出した試料注入部とを有し、該試料注入部は該複数のキャピラリの一方の先端部を含み、窓部及び試料注入部の各部において該複数のキャピラリが軸を一平面上で並列させて配列されており、該窓部において該複数のキャピラリの軸に直交する一つの平面と各キャピラリとの交点として定義される該複数のキャピラリの検出部から、該試料注入部の先端部までの全てのキャピラリの長さが等しいことを特徴とした電気泳動部材。

【請求項2】 該複数のキャピラリがガラスキャピラリであることを特徴とした請求項1に記載の電気泳動部材。

【請求項3】 該第一の支持体が、該キャピラリ層と該第二の支持層との間に第二の接着剤層を有することを特徴とした請求項1又は2いずれかに記載の電気泳動部材。

【請求項4】 該複数のキャピラリの最外層にコーティング層が形成されており、該検出部を含む該窓部の一部或いは全部で該コーティング層が剝離されていることを特徴とした請求項1～3いずれかに記載の電気泳動部材。

【請求項5】 該試料注入部での該複数のキャピラリの配列の間隔が9 mmの整数分の1であることを特徴とした請求項1～4いずれかに記載の電気泳動部材。

【請求項6】 該検出部前後の該複数のキャピラリを支持する第二の支持体を有することを特徴とした請求項1～5いずれかに記載の電気泳動部材。

【請求項7】 該第一の支持体が、該窓部を含む開口部を有することを特徴とした請求項1～6いずれかに記載の電気泳動部材。

【請求項8】 以下の1～3の工程を備えることを特徴とした電気泳動部材の製造方法

1 第一の支持層上に形成された第一の接着剤層に、数値制御された敷設装置を用いて、複数のキャピラリを、該複数のキャピラリの軸に直行する一つの平面と各キャピラリとの交点として定義される該複数のキャピラリの検出部から、各キャピラリの一方の先端部を含む試料注入部の各キャピラリの該先端部までの長さが、全てのキャピラリで同じになるように、また少なくとも該検出部とその周辺からなる窓部及び該試料注入部各個所において、該複数のキャピラリが軸を一平面で並列させて配列されるように敷設してキャピラリ層を形成する工程；

2 該キャピラリ層上に第二の支持層を積層する工程；及び

3 該第一の支持層、該第一の接着剤層及び該第二の支持層を部分的に取り除いて、該複数のキャピラリの該窓部及び該試料注入部を露出させる工程。

【請求項9】 以下の1～3の工程を備えることを特徴とした電気泳動部材の製造方法

1 第一の支持層上に形成された第一の接着剤層に、数値制御された敷設装置を用いて、複数のキャピラリを、該複数のキャピラリの軸に直行する一つの平面と各キャピラリとの交点として定義される検出部から、各キャピラリの一方の先端部を含む試料注入部の各キャピラリの該先端部までの長さが、全てのキャピラリで同じになるように、また少なくとも該検出部とその周辺からなる窓部及び該試料注入部各個所において、該複数のキャピラリが軸を一平面で並列させて配列されるように敷設してキャピラリ層を形成する工程；

2 該キャピラリ層上に、表面に第二の接着剤層を有した第二の支持層を、第二の接着剤層が該キャピラリ層に接するように配置して積層する工程；及び

3 該第一の支持層、該第一の接着剤層、該第二の接着剤層及び該第二の支持層を部分的に

取り除いて、該複数のキャピラリの該窓部及び該試料注入部を露出させる工程。

【請求項10】 該複数のキャピラリがガラスキャピラリであることを特徴とした請求項8又は9に記載の電気泳動部材の製造方法。

【請求項11】 該複数のキャピラリとして、最外層にコーティング層が形成されたガラスキャピラリを用いて、該検出部を含む該窓部の一部或いは全部となる個所の該コーティング層を剝離する工程を備えることを特徴とした請求項8～10いずれかに記載の電気泳動部材の製造方法。

【請求項12】 該複数のキャピラリを敷設する際、該複数のキャピラリに荷重を加えることを特徴とした請求項8～11のいずれかに記載の電気泳動部材の製造方法。

【請求項13】 該複数のキャピラリを敷設する際、該第一の接着剤層及び／又は該複数のキャピラリに、熱となるエネルギーを印加することを特徴とした請求項8～12のいずれかに記載の電気泳動部材の製造方法。

【請求項14】 請求項7に記載の電気泳動部材、及び、レーザ光線を該開口部において反射し、該複数のキャピラリの軸が並列している平面に平行な方向から、該複数のキャピラリの該検出部に照射する手段を有することを特徴とするキャピラリ電気泳動装置。

## VERIFICATION OF A TRANSLATION

In the matter of an Application for Letters Patent, serial number  
10/628,274,

I, Miyoko Hotaka, a translator of 4-6-3-402, Tsukiji,  
Chuo-ku, Tokyo, Japan, am well acquainted with the Japanese and English languages,  
and hereby certify that to the best of my knowledge and belief, the attached is a true  
translation into the English language made by me of the claims that were determined by  
the Japan Patent Office to be patentable from the Japanese Patent Application No.  
2002-244676 filed by Hitachi Chemical Co., Ltd. and Hitachi, Ltd. with the Japan  
Patent Office on August 26, 2002.

Dated this 21st day of August, 2006

  
Miyoko Hotaka

## [Claims]

[Claim 1] An electrophoresis member, comprising a plurality of capillaries and a first supporter comprising a first support layer, a first adhesive layer and a second support layer, wherein:

5 the first adhesive layer is positioned on the first support layer, the capillaries lie on the first adhesive layer to form a capillary layer, and the second support layer is positioned on the capillary layer;

10 the capillary layer has a window portion and a sample injection portion including a terminating end of each capillary, the capillaries, at the sample injection portion, being exposed by partially removing one end portion of the first supporter and, at the window portion,

15 being exposed by partially removing another portion of the first supporter;

the capillaries, at each of the window portion and the sample injection portion, are arranged so that axes of the capillaries have a parallel, coplanar relationship;

20 the capillaries have, in the window portion, detection parts defined as intersections of the capillaries and a plane intersecting perpendicularly to the axes of the capillaries; and

the capillaries have equal lengths between the detection parts and the terminating ends included in the sample injection portion.

25

[Claim 2] The electrophoresis member of claim 1, wherein the capillaries are glass capillaries.

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[Claim 3] The electrophoresis member of claim 1 or 2, wherein the first supporter has a second adhesive layer interposed between the capillary layer and the second support layer.

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[Claim 4] The electrophoresis member of any one of claims 1 to 3, wherein each capillary, except the window portion or a part of the window portion including the detection part, has a coating layer as an outermost layer.

5

[Claim 5] The electrophoresis member of any one of claims 1 to 4, wherein the capillaries, at the sample injection portion, are arranged at equal intervals given by dividing 9 mm by an integer.

10

[Claim 6] The electrophoresis member of any one of claims 1 to 5, wherein the capillaries, in the window portion, are supported before and behind the detection parts by a second supporter.

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[Claim 7] The electrophoresis member of any one of claims 1 to 6, wherein the first supporter has an opening including the window portion.

20

[Claim 8] A method of producing an electrophoresis member, comprising steps ①, ② and ③:

① a step of forming a capillary layer comprising a plurality of capillaries on an adhesive layer born on a first support layer, by laying the capillaries on the adhesive layer by using a numerically controlled laying apparatus, so that

the capillary layer has a window portion and a sample injection portion including a terminating end of each capillary, the capillaries, at each of the window portion and the sample injection portion, being arranged so that axes of the capillaries have a parallel, coplanar relationship;

the capillaries have, in the window portion, detection parts defined as intersections of the capillaries and a plane intersecting perpendicularly to the axes of the

35



capillaries; and  
the capillaries have equal lengths between the detection  
parts and the terminating ends included in the sample  
injection portion;

5       ② a step of laminating a second support layer on the  
capillary layer; and

      ③ a step of exposing the capillaries, at each of the  
window portion and the sample injection portion, by partially  
removing the first support layer, the first adhesive layer  
10      and the second support layer.

[Claim 9] A method of producing an electrophoresis  
member, comprising steps ①, ② and ③:

      ① a step of forming a capillary layer comprising a  
15      plurality of capillaries on an adhesive layer born on a first  
support layer, by laying the capillaries on the adhesive  
layer by using a numerically controlled laying apparatus, so  
that

the capillary layer has a window portion and a sample  
20      injection portion including a terminating end of each  
capillary, the capillaries, at each of the window portion  
and the sample injection portion, being arranged so that  
axes of the capillaries have a parallel, coplanar  
relationship;

25      the capillaries have, in the window portion, detection  
parts defined as intersections of the capillaries and a  
plane intersecting perpendicularly to the axes of the  
capillaries; and

the capillaries have equal lengths between the detection  
30      parts and the terminating ends included in the sample  
injection portion;

      ② a step of laminating on the capillary layer a second  
support layer having a surface bearing a second adhesive  
layer, so that the second adhesive layer contacts the

capillary layer; and

- ③ a step of exposing the capillaries, at each of the window portion and the sample injection portion, by partially removing the first support layer, the first adhesive layer, the second adhesive layer and the second support layer.

[Claim 10] The method of producing an electrophoresis member of claim 8 or 9, wherein the capillaries are glass capillaries.

10

[Claim 11] The method of producing an electrophoresis member of any one of claims 8 to 10, wherein each capillary is a glass capillary having a coating layer as an outermost layer, and the method further comprises a step of peeling off the coating layer at the window portion or at a part of the window portion including the detection parts.

15

[Claim 12] The method of producing an electrophoresis member of any one of claims 8 to 11, wherein the capillaries are applied with a load while being laid on the first adhesive layer.

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[Claim 13] The method of producing an electrophoresis member of any one of claims 8 to 12, wherein the first adhesive layer and/or the capillaries are applied with energy convertible into heat while being laid on the first adhesive layer.

25

[Claim 14] A capillary electrophoresis apparatus, comprising the electrophoresis member of claim 7 and a means for reflecting a laser ray in the opening to irradiate the laser ray to the detection parts of the capillaries through a plane parallel to the plane wherein the axes of the capillaries lie in parallel.

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整理番号:14500820 発送番号:144498 発送日:平成18年 4月11日 1/E

**特許査定**

特許出願の番号	特願2002-244676
起案日	平成18年 4月 5日
特許庁審査官	黒田 浩一 9218 2J00
発明の名称	電気泳動部材、その製造方法及びキャピラリー電気泳動装置
請求項の数	14
特許出願人	日立化成工業株式会社（外 1名）
代理人	穂高 哲夫

この出願については、拒絶の理由を発見しないから、特許査定する。

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上記はファイルに記録されている事項と相違ないことを認証する。

認証日 平成18年 4月 7日 経済産業事務官 平瀬 恵美子

注意：この書面を受け取った日から30日以内に特許料の納付が必要です。

## VERIFICATION OF A TRANSLATION

In the matter of an Application for Letters Patent, serial number  
10/628,274,

I, Miyoko Hotaka, a translator of 4-6-3-402, Tsukiji,  
Chuo-ku, Tokyo, Japan, am well acquainted with the Japanese and English languages,  
and hereby certify that to the best of my knowledge and belief, the attached is a true  
translation into the English language made by me of the Decision to Grant a Patent  
from the Japanese Patent Application No. 2002-244676 filed by Hitachi Chemical Co.,  
Ltd. and Hitachi, Ltd. with the Japan Patent Office on August 26, 2002.

Dated this 21st day of August, 2006



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Miyoko Hotaka

Reference No.: 14500820  
Sending No.: 144498  
Sending date: April 11, 2006

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**DECISION TO GRANT A PATENT**

Number of patent application: Patent Application No. 2002-244676  
Drafting date: April 5, 2006  
Examiner of the Patent Office: Koichi Kuroda 9218 2J00  
Title of the invention: ELECTROPHORESIS MEMBER, PRODUCTION  
THEREOF AND CAPILLARY ELECTROPHORESIS  
APPARATUS  
Number of claims: 14  
Applicant for patent: Hitachi Chemical Co., Ltd. (and another)  
Agent: Tetsuo Hotaka

With respect to the patent application, a decision that a patent is to be granted is rendered because no reasons for refusal are found.

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This is to certify that the above-mentioned matters are truly and correctly the same as the matters recorded in file.

Date of certification: April 7, 2006

Emiko Hirase, an Official of Economy, Trade and Industry

Note: Annual fees shall be paid within 30 days from the date this notification is received.